

# CO2MVS RESEARCH ON SUPPLEMENTARY OBSERVATIONS



## Analysis of the FFCO<sub>2</sub> emissions at national scale in Western Europe in 2024 and recommendations for the implementation of regional scale APO and <sup>14</sup>CO<sub>2</sub> data assimilation in the CO2MVS

Due date of deliverable	31 December 2025
Submission date	16 December 2025
File Name	CORSO-D3.6
Work Package /Task	WP3 /3.3-3.4
Organisation Responsible of Deliverable	UNIVBRIS/WU
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Revision number	1.0
Status	Final
Dissemination Level / location	Public <a href="http://www.corso-project.eu">www.corso-project.eu</a>



The CORSO project (grant agreement No 101082194) is funded by the European Union.

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# 1 Executive Summary

This Deliverable 3.6 has been merged with Deliverable 3.5 to deliver one overall consistent report. Please refer to D3.5 for more information.

## 1 Scope of this deliverable

### 1.1 Objectives of this deliverable

In Work Package 3, specifically tasks 3.3 and 3.4, the goals were to develop global and European scale multi-tracer or purely “fossil fuel CO<sub>2</sub>” inverse modelling systems. These systems were used to assess the relevance of assimilating atmospheric <sup>14</sup>CO<sub>2</sub> and O<sub>2</sub> or APO observations with atmospheric CO<sub>2</sub> data to disentangle the fossil fuel component from other CO<sub>2</sub> signals and derive fossil fuel emission estimates for several decades at continental scale, and for recent years in Europe at regional scales.

Given the strong connections between the regional and global scale inversion systems, and to strengthen the recommendations and conclusions, we have combined the results into a single deliverable report instead of two separate ones.

Please see D3.5 for more information.

### 1.2 Deviations and counter measures

With the agreement of the authors and Project Officer the Deliverable 3.6 has been merged with Deliverable 3.5, therefore please refer to D3.5 for the detailed report. The full titles of the two deliverables are:

Deliverable number	Title	Lead Beneficiary
D3.5	Estimates of the annual fossil fuel CO <sub>2</sub> emissions at the continental to national scales over a decade and recommendations for the implementation of global scale APO and <sup>14</sup> CO <sub>2</sub> data assimilation in the CO2MVS	WU
D3.6	Analysis of the FFCO <sub>2</sub> emissions at national scale in Western Europe in 2024 and recommendations for the implementation of regional scale APO and <sup>14</sup> CO <sub>2</sub> data assimilation in the CO2MVS	UNIVBRIS

### 1.3 Project partners who contributed to the report:

Partners	
COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	CEA
WAGENINGEN UNIVERSITY	WU
UNIVERSITY OF LUND	ULUND
UNIVERSITY OF BRISTOL	UNIVBRIS
EUROPEAN CENTER FOR MEDIUM-RANGE WEATHER FORECASTS	ECMWF